DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

REPLY TO
ATTENTION OF

Military Unit
Contracting Division

AMENDMENT R0001

December 1, 2003

Bryan J. Zatica, President, MACRO-Z Technology Company, 841 E. Washington Avenue, Santa Ana, California 92701, EMAIL: mztbz@earthlink.net, Phone: (714) 564-1130, FAX: -1144 (Contract Number DACA67-03-D-2005)

Joe W. Terrell, CEO, and Dennis McCrumb, Vice President, Bristol Environmental & Engineering Services Corporation, 2000 W. International Airport Road, #C-1, Anchorage, Alaska, 99502-1117, EMAILS: (jterrell@beesc.com and dmccrumb@beesc.com), Phones: (907) 563-0013 and (360) 651-9622; FAX: (907) 563-6713 AND (360) 653-7983 (Contract Number DACA67-03-D-2007)

SUBJECT: **Amendment Number 0001** to Request for Proposal (RFP) No. W912DW-04-T-2102, entitled "Shoot House, Fort Lewis, WA"

Dear MATOC Contractors:

Please reference your multiple award task order contracts (MATOC) numbers DACA67-03-D-2005, DACA67-03-D-2006, and DACA67-03-D-2007 entitled "IDIQ MATOC for Miscellaneous Construction, Repair and Maintenance of Facilities at Fort Lewis and Yakima, Washington.", and Request for Proposal (RFP) No. W912DW-04-T-2102, entitled "Shoot House, Fort Lewis, WA"

The purpose of this amendment 0001, dated December 1, 2003, is to incorporate the following information in this solicitation:

(1) Revisions to drawings by notation in the specifications under the SPECIAL CLAUSES, Section 00800 by "Revisions To Drawings" listed after the Index of Drawings.

(2) Addition of Geotechnical Report as "Attachment A" to Section 00800, provided for information only.

(3) Revision to Project Table Of Contents for technical specifications.

(4) Revision to Section 02921, SEEDING, paragraph 2.1.2 for "Field Seed" mix and deletion of paragraph "2.3.4.2 Rotted Manure."

(5) Addition of new Section 12352 RESIDENTIAL CASEWORK.

The attached revised specification sections supersede and replace the corresponding specification sections. Specification changes are generally identified, for convenience, by strikeout for deletions, and underlining of text for additions. All portions of the revised or new pages shall apply whether or not changes have been indicated.

Please acknowledge receipt of amendment Number 0001, dated December 1, 2003, in the cover letter of your signed offer. **The time and date for receipt of your proposal, Tuesday, December 9th, 2003, 2 P.M., remains unchanged.**

Any questions regarding the technical aspects of this project should be addressed to Emman Alvarez at telephone number (206) 764-6752. Administrative questions should be addressed to Nancy Gary, Contract Specialist, at (206) 764-3266.

Sincerely,

Susan K. Sherrell
Contracting Officer

Attachments
Revised Section 00800
Section 00800A
Revised Spec Table of Contents
Revised Section 02921
Section 12352

TABLE OF CONTENTS
SPECIAL CLAUSES

The sections listed below are revisions or additions to the Special Clauses included in the MATOC Contract.

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SECION 00800

SPECIAL CLAUSES

SC-10. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984) (FAR 52.212-3).

The Contractor shall be required to (a) commence work under this Contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work, including all optional items awarded, ready for use not later than 360 calendar days after date of receipt by Contractor of notice to proceed. The time stated for completion shall include final cleanup of the premises.

SC-10.1 OPTION FOR INCREASED QUANTITY

a. The Government may increase the quantity of work awarded by exercising one or more of the Optional Bid Items 0006 through 0012 at any time, or not at all, but no later than 90 calendar days after receipt by Contractor of notice to proceed. Notice to proceed on work Item(s) added by exercise of the option(s) will be given upon execution of consent of surety.

b. The parties hereto further agree that any option herein shall be considered to have been exercised at the time the Government deposits written notification to the Contractor in the mails.

c. The time allowed for completion of any optional items awarded under this contract will be the same as that for the base item(s), and will be measured from the date of receipt of the notice to proceed for the base item(s).

SC-11. LIQUIDATED DAMAGES – CONSTRUCTION. (FAR 52.211-12)(SEP 2000)

11.1. (a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of $822.00 for each day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

11.2. For any number of Task Orders accomplished at one site for which delay costs are applicable at the same time, the total daily liquidated damages will be limited to the damages for one Task Order for each calendar day of delay except when separate additional damages are specified in an individual Task Order. These additional damages, if specified, shall be concurrent and cumulative and applied in addition to the basic liquidated damages noted above or in the Task Order. For any number of Task Orders at separate sites for which delay costs are applicable at the same time, the total daily basic liquidated damages shall be applied concurrent and cumulative. This shall be calculated with each and any other delinquent Task Order for each calendar day of delay. If separate liquidated damages are specified in the Task Order, this amount will be separate from other task orders.

11.3. If the Government terminates the Contractor's right to proceed, resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

11.4. If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

11.5. Exception to Liquidated Damage. In case the Contracting Officer determines completion of work is not feasible during the completion period(s) stated in the Task Order, such work will be exempted from liquidated damages.

SC-16. **PHYSICAL DATA (FAR 52.236-4) (APR 1984). R**evise subparagraph (a) as follows (all other subparagraphs remain unchanged):

(a) Physical Conditions: The indications of physical conditions on the drawings and in the specifications are the result of site investigations by test holes shown on the drawings. Attached to the end of this section as "Attachment A" is the "Geotechnical Report" dated 11 August 2003.

SC-28 CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (DEC 91)(DOD FAR SUPP 252.236-7001)

(a) The Government--

(1) Will provide the Contractor, without charge, five sets of large scale contract drawings and specifications except publications incorporated into the technical provisions by reference; (2) Will furnish additional sets on request, for the cost of reproduction; and (3) May, at its option, furnish the Contractor one set of reproducibles, or 5 sets of half-size drawings, in lieu of the drawings in paragraphs (a)(1) and (a)(2) of this clause.

(b) The Contractor shall--

(1) check all drawings furnished immediately upon receipt;
(2) Compare all drawings and verify the figures before laying out the work;
(3) Promptly notify the Contracting Officer of any discrepancies; and
(4) Be responsible for any errors which might have been avoided by complying with this paragraph (b).

(c) Large scale drawings shall, in general, govern small scale drawings. Figures marked on drawings shall, in general, be followed in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work, but shall be performed as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the index of drawings at the end of this section.

INDEX OF DRAWINGS

RANGE 25 TWO-STORY SHOOT HOUSE, FORT LEWIS, WASHINGTON
Project Number 57653
File No. 22s/171-22-01

SHEET NO.	PLATE NUMBER	TITLE	REVISION NUMBER	DATE
		GENERAL		
1	G-1	TITLE AND AREA MAP		03NOV03
2	G-2	DRAWING INDEX AND GENERAL NOTES		03NOV03
		CIVIL		
3	C-1	HAUL ROUTE LOCATIONS		03NOV03
4	C-2	SITE PLAN		03NOV03
5	C-3	GRADING PLAN		03NOV03
6	C-4	FENCING DETAILS		03NOV03
		ARCHITECTURAL		
7	A-1	ABBREVIATIONS, SYMBOLES, LEGEND, AND GENERAL NOTES		03NOV03
8	A-2	FIRST FLOOR PLAN AND WALL SCHEDULE		03NOV03
9	A-3	SECOND FLOOR PLAN		03NOV03
10	A-4	UPPER ROOF PLAN AND DOOR SCHEDULE		03NOV03
11	A-5	VENT AND CMU WALL CONTROL JOINT PLAN		03NOV03
12	A-6	BUILDING ELEVATIONS		03NOV03
13	A-7	BUILDING SECTIONS		03NOV03
14	A-8	WALL SECTIONS		03NOV03
15	A-9	ENLARGED STAIR PLANS AND SECTIONS		03NOV03
16	A-10	ROOF DETAILS		03NOV03
17	A-11	DOOR, LOUVER, AND WINDOW DETAILS		03NOV03
18	A-12	MISCELLANEOUS DETAILS		03NOV03
		STRUCTURAL		
19	S-1	STRUCTURAL NOTES I		03NOV03
20	S-2	STRUCTURAL NOTES II		03NOV03
21	S-3	FOUNDATION PLAN		03NOV03
22	S-4	LOWER ROOF AND SECOND FLOOR HOLLOW CORE DECK FRAMING PLAN		03NOV03
23	S-5	LOWER ROOF AND SECOND FLOOR STEEL FRAMING PLAN		03NOV03
24	S-6	UPPER ROOF FRAMING PLAN AND DETAILS		03NOV03
25	S-7	FOUNDATION AND SLAB DETAILS		03NOV03
26	S-8	MASONARY WALL SECTION		03NOV03
27	S-9	MASONARY WALL SECTION AND DETAILS		03NOV03
28	S-10	BARRIER WALL SECTION AND DETAILS		03NOV03
29	S-11	HOLLOW CORE SLAB DETAILS		03NOV03
30	S-12	TOPPING SLAB AND MISCELLANEOUS DETAILS		03NOV03
31	S-13	STEEL FRAMING DETAILS I		03NOV03

SHEET NO.	PLATE NUMBER	TITLE	REVISION NUMBER	DATE
32	S-14	STEEL FRAMING DETAILS II		03NOV03
33	S-15	STEEL FRAMING DETAILS III		03NOV03
34	S-16	ENLARGED EXTERIOR STAIR PLANS		03NOV03
35	S-17	EXTERIOR STAIR SECTION AND DETAILS		03NOV03
		ELECTRICAL		
36	E-1	ELECTRICAL SYMBOLS, ABBREVIATIONS AND SITE PLAN		03NOV03
37	E-2	ELECTRICAL FIRST FLOOR PLAN		03NOV03
38	E-3	ELECTRICAL SECOND FLOOR PLAN		03NOV03
39	E-4	EXTERIOR ELECTRICAL DETAILS I		03NOV03
40	E-5	EXTERIOR ELECTRICAL DETAILS II		03NOV03
41	E-6	EXTERIOR ELECTRICAL DETAILS III		03NOV03
42	E-7	EXTERIOR ELECTRICAL DETAILS IV		03NOV03
43	E-8	INTERIOR ELECTRICAL DETAILS		03NOV03

REVISIONS TO DRAWINGS

Plate C-2: For the corresponding incomplete detail/section reference marks revise the drawing plate cross-references as follows.

Section B/S-17.
Section C/C-4.
Detail A/C-4.
Detail 6/S-7.
Optional Work – Double Swing Gate shall reference Plate C-4.
Optional Work – Removable Fence shall reference Plate C-4.

Plates C-2 & C-3:

Revise Plan North to align with the long axis of the building. Project North shall be aligned with the horizontal axis of the drawing.

Plate A-2: Revise Key Note 13 to read, “Cabinets shall be Modular “Residential – Grade” 34-1/2”H x 24”W x 35 Total LF base cabinet with preformed 24”W plastic laminate Countertop. Base cabinet shall have one drawer with a hinged door below. Provide all hardware (door pulls, hidden hinges, etc.).”

Plate A-3: Add “6 Total” to Curb callout 6/A-10.

Plate A-5: Revise First Floor Vent Plan identifier from 1/A-2 to 1/A-5. Revise Second Floor Vent Plan identifier from 1/A-3 to 2/A-5.

Plate A-6: Revise all Elevation (title) identifier to indicate Plate A-6, not A-2.

Plate A-7:

a. Section C: add window callout 7/A-11 and masonry vent opening callout 2/A-12.
b. Section D: 8"x8", metric equivalent shall be 203mm x 203mm.
c. Sections E & F: Add masonry vent opening callout 2/A-12.

Plate A-12: Detail 4/A-9, revised plywood landing on joists note to:
"1-1/8" (29mm) plywood landing on double 2x12 rim joist and 2x6 intermediate framing joist at 16" o.c."

Plate S-3:

a. Add callout 1/S-7 to 7" slab and 5" slab notes.
b. Note 6, add "see section 7/S-3."

Plate S-10: Revise Wall C graphic to show five 8' section and two 1' sections.

Plate E-3: Note on top: change "IMT" to "IMC".

STANDARD DETAILS BOUND IN THE SPECIFICATIONS

DRAWING NUMBER	SHEET NUMBER	TITLE	DATE
SECTION 01501 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS			
	1 & 2	U.S. Army Project Construction Sign	84JUN20
	1	Hard Hat Sign	10SEP90

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SECTION 00800

ATTACHMENT A

FOR INFORMATION ONLY

SHOOT HOUSE, RANGE 25
FORT LEWIS, WASHINGTON

PROJECT NO. 57653

FINAL
GEOTECHNICAL REPORT

11 AUGUST 2003

PREPARED BY

CIVIL/SOILS SECTION, DESIGN BRANCH
SEATTLE DISTRICT, U.S. ARMY CORPS OF ENGINEERS

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Shoot House
Fort Lewis, Washington
PN 57653

1. General. This project consists of constructing a new Live-fire Exercise Shoot House (557 square meters (6,000 square feet)) to support the U.S. Army Special Operations Command (USASOC). Other project features include electric utility connection and site improvements.

2. Foundation Exploration. Subsurface exploration was not conducted at this site. Generic information from previous exploration from sites in the vicinity is sufficient for design.

3. Site Conditions.

a. Regional Geology. The site lies on a broad upland drift plain in the southern part of the Puget Sound Basin. The upland separates the main body of Puget Sound on the west from a complex of old (Pleistocene) ice marginal stream channels on the east. The upland is underlain by deposits from the latest Pleistocene (Vashon) glaciation which ended about 12,000 years ago. The thickness of unlithified Pleistocene sediments beneath the Puget Sound Basin is generally in excess of 305 meters and reaches approximately 610 meters in the vicinity of the site. The low relief upland surface slopes gently westward with maximum elevations decreasing from 213 meters on the east to 92 meters on the west. The central and western portions of the upland are characterized by an extensive series of broad glacial meltwater channels cut about 30 meters into the general upland surface and mantled by a thin veneer of latest outwash gravel (Steilacoom gravel) deposited in braided channels as melting of ice from the upland permitted rapid discharge of glacial Lake Puyallup, on the east, across the upland surface toward the depression of Puget Sound. The gravels in these channels contain an extensive, shallow, unconfined aquifer, manifest in a number of large lakes and peat-filled former lakes. Kettles within these channels attest to the original incorporation of ice blocks within the gravel deposits.

b. Site Geology and Foundation Conditions. The site lies on a glacial outwash plain underlain by sand and gravel. Subsurface investigations were not conducted for the project. However, Fort Lewis site conditions generally consist of up to about a meter of loose, black organic silty gravel underlain to considerable depth by clean gravels and sands with varying amounts of cobbles. The relative density of the gravels and sands generally increases with depth. Depth to ground water is unknown at this location but is typically found within 6 meters of ground surface, seasonally fluctuating about 1.5 meters to about 2 meters.

c. Earthquake History. Reference: Draft TI 809-04/AFMAN 32-1149 V1 (I), Seismic Design for Buildings, May 1998. From Table 3-1, Site Classification, based on soil types and shear wave velocities from similar soils on the base, a site classification of C is recommended for design.

d. Environmental History. Subsurface exploration has not been conducted at this site. If any suspected hazardous material is found during the performance of this job, all work will stop and the Corps of Engineers inspector and the Base Environmental Office will be notified immediately.

4. Recommendations for Foundation Design.

a. Site Preparation. Site specific information on the limits of unsatisfactory materials are unknown, however, in general the surficial black, organic-rich soils extend about to 1 meter in depth. Site preparation design shall remove all of the black organic soils beneath all structures with footings. If design grades are such that unsatisfactory materials are likely to remain after design excavation, the contract specifications should contain provisions for removing and replacing any unsatisfactory material beyond neat lines and grades. All unsatisfactory materials shall be removed from under buildings and structures with footings. The access road for the project will consist of surface-grading only with no surfacing due to the close proximity to the proposed Helipad. For each 300 mm of overexcavated depth below footings, increase footing trench width by 300 mm. Replace excavated material with clean gravels compacted to at least 95 percent of maximum modified Proctor density. Fills shall be placed in 225 mm lifts with maximum particle size of 150 mm; however, occasional cobbles having sizes up to but not exceeding the lift thickness will be permitted provided that there are no pockets, lenses, or concentrations of stone. Where such pockets, lenses, or concentrations exist, they shall be removed and replaced at the contractor's expense.

b. Soil Properties. We recommend the following soil properties for use in design analysis: $\phi = 35$ degrees, cohesion = 0, moist unit weight = 2170 kilograms per cubic meter.

c. Footing and Slab Design. Footings shall be placed a minimum of 450 mm below finished grade for frost protection. Computations based on Terzaghi bearing capacity factors, using the above soil properties, indicate an allowable bearing capacity of slightly more than 192 kilopascals (kPa) for footings at the design frost depth. We therefore recommend that footings be designed for a net allowable bearing capacity of 192 kPa dead load plus live load with one-third overstress allowed for temporary dynamic loads on the compacted gravel or the natural sandy gravel foundation. Except as otherwise specifically approved, slabs-on-grade shall not bear directly on footings or pedestals and shall not be tied to footings or pedestals. A capillary water barrier, consisting of a 150 mm-minimum thickness of free draining granular material, and a vapor barrier shall be provided beneath all interior slabs-on-grade. This will also serve as a cushion where the slabs pass over footings or grade beams.

d. Earth Pressure Coefficients. For gravelly backfill material with assigned angle of internal friction, , of 35 degrees, theoretical earth pressure coefficients for active (K_a), at rest (K_o), and passive (K_p) conditions are .27, .45, and 3.7, respectively. These coefficients are valid only for frictionless, vertical walls with horizontal backfill. For walls designed for other conditions, appropriate revisions of these coefficients must be made. Wall movements of at least .005H (H = wall height) are required to reduce wall pressures to active condition. Very stiff or internally braced walls for which movements less than .005H are anticipated should be designed for K_o condition or appropriate braced cut criteria. A relatively large wall movement is required to develop full passive earth pressure. For this reason, $K_p = 2.0$ is recommended for general design use. For static conditions, all walls should have a safety factor of at least 2.0.

e. Underground Utilities. All frost susceptible utility lines shall be placed with top of pipe at least 450 mm below ground surface in open areas for frost protection and 900 mm below ground surface under traffic areas for strength requirements. Alternatively, pipe placed at depths less than 900 mm under traffic areas shall be designed for the anticipated loads, except in no case shall the top of pipe be less than 450 mm below ground surface. In situ earth resistivity measurements taken in similar soils at other areas on the base indicate very high resistivity in excess of 500,000 ohm-cm, which is indicative of soils of unlikely corrosion activity. Materials in this area are generally relatively uniform clean gravels, with the water table below the level of utilities. Corrosion of utilities in this area has reportedly not been a significant problem.

f. Earth Resistivity Measurements and Electrical Grounding System. Due to known high resistivity soil conditions as previously mentioned in paragraph 4.e. above, obtaining lower ground resistance values has been a problem at Fort Lewis. In the past, designers have used electrolytic grounding systems, extensive use of copper conductors, and other such methods at Fort Lewis.

5. Recommended Construction and Drainage Considerations.

a. Grades of at least 1 percent and preferably 5 percent, to promote drainage of water away from the structure, shall be provided around the perimeter of the structure.

b. Runoff from roofs shall be directed away from the structure by downspouts and storm drains or surface channels.

c. Walks and pavements adjacent to the structure shall be positively sloped away from the structure.

d. The site shall be prepared to avoid ponding of water in low areas. Sumps and pumps shall be provided at the bottom of excavations, if necessary, to remove rainwater or surface drainage which has entered the excavation.

6. Recommendations for Pavement Design. The access road to this project shall consist of a surfaced-graded with no additional surfacing. The close proximity of a proposed Helipad has made it necessary to not to use gravel surfacing to minimize Foreign Object Debris (FOD) around the Helipad.

a. Compaction Requirements. The top 150 mm of the subgrade shall be compacted to at least 90 percent of the maximum modified Proctor density for cohesive materials and 95 percent of the maximum modified Proctor density for cohesionless materials

7. Recommendations for Floor Slab Design. The design of the floor slab shall be according to the requirements of TM 5-809-12, "Concrete Floor Slabs on Grade Subjected to Heavy Loads," where applicable.

8. Location of Borrow. Borrow materials are not available on Fort Lewis. The Contractor shall obtain borrow materials from sources outside the limits of Government-controlled land.

9. Disposal Areas. Disposal areas are not available on the Fort. The Contractor shall be responsible for disposal of all materials outside the limits of Government-controlled land.

10. Preparation of Plans and Specifications. The technical manuals referenced below shall also be reviewed for information relative to preparation of plans and specifications.

a. References.

(1) TM 5-742, Concrete and Masonry.

(2) TM 5-805-1, Standard Practice for Concrete for Military Structures.

(3) TM 5-809-1/AFM 88-3, Chap. 1, Load Assumptions for Buildings.

(4) TM 5-809-2/AFM 88-3, Chapter 2, Concrete and Structural Design for Buildings.

(5) TM 5-809-3/AFM 88-3, Masonry Structural Design for Buildings.

(6) Draft TI 809-04/AFMAN 32-1149 V1 (I), Seismic Design for Buildings, May 1998.

(7) TM 5-809-12/AFM 88-3, Chapter 15, Concrete Floor Slabs on Grade Subjected to Heavy Loads.

(8) TM 5-818-1, Procedures for Foundation Design of Buildings and Other Structures (Except Hydraulic Structures).

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PROJECT TABLE OF CONTENTS

SECTION 02921

SEEDING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AGRICULTURAL MARKETING SERVICE (AMS)

AMS Seed Act	(1995) Federal Seed Act Regulations Part 201

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 602	(1995a) Agricultural Liming Materials
ASTM D 4972	(1995a) pH of Soils
ASTM D 5268	(1992; R 1996) Topsoil Used for Landscaping Purposes

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment;
Surface Erosion Control Material;
Chemical Treatment Material; G

Manufacturer's literature including physical characteristics, application and installation instructions for equipment, surface erosion control material and chemical treatment material.

A listing of equipment to be used for the seeding operation.

Delivery;

Delivery schedule.

Finished Grade and Topsoil; G

Finished grade status.

Topsoil; G

Availability of existing surface soil to be processed for

topsoil from the stripping and stock piling operation or import, if stockpile is non-existent.

Quantity Check;

Bag count or bulk weight measurements of material used compared with area covered to determine the application rate and quantity installed.

Seed Establishment Period; G

Calendar time period for the seed establishment period. When there is more than one seed establishment period, the boundaries of the seeded area covered for each period shall be described.

Maintenance Record; G

Maintenance work performed, area repaired or reinstalled, diagnosis for unsatisfactory stand of grass plants.

Application of Pesticide; G

Pesticide treatment plan with sequence of treatment work with dates and times. The pesticide trade name, EPA registration number, chemical composition, formulation, concentration of original and diluted material, application rate of active ingredients, method of application, area treated, amount applied; and the name and state license number of the state certified applicator shall be included.

SD-04 Samples

Delivered Topsoil; G

Samples taken from several locations at the source.

Soil Amendments;

A 10 pounds sample.

Mulch;

A 10 pounds sample.

SD-06 Test Reports

Equipment Calibration;

Certification of calibration tests conducted on the equipment used in the seeding operation.

Soil Test; G

Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

SD-07 Certificates

Seed; G
Topsoil; G
pH Adjuster;
Fertilizer;
Organic Material;
Soil Conditioner;
Mulch; G

Pesticide; G

Prior to the delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following:

a. Seed. Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.

b. Topsoil. Particle size, pH, organic matter content, textural class, soluble salts, chemical and mechanical analyses.

c. pH Adjuster. Calcium carbonate equivalent and sieve analysis.

d. Fertilizer. Chemical analysis and composition percent.

e. Organic Material: Composition and source.

f. Soil Conditioner: Composition and source.

g. Mulch: Composition and source.

h. Pesticide. EPA registration number and registered uses.

1.3 SOURCE INSPECTION

The source of delivered topsoil shall be subject to inspection.

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.4.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

1.4.1.1 Delivered and Application of Topsoil

Prior to the delivery or application of any topsoil, its availability shall be verified in paragraph TOPSOIL. A soil test shall be provided for topsoil to be processed from existing surface soil stripped and stockpiled on-site and for topsoil delivered to the site.

1.4.1.2 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of

containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.4.1.3 Pesticides

Pesticide material shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses.

1.4.2 Inspection

Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected. Other materials shall be inspected for compliance with specified requirements. The following shall be rejected: open soil amendment containers or wet soil amendments; topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter; and topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the job site.

1.4.3 Storage

Materials shall be stored in designated areas. Seed, lime, and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with seeding operation materials.

1.4.4 Handling

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles.

1.4.5 Time Limitation

Hydroseeding time limitation for holding seed in the slurry shall be a maximum 24 hours.

PART 2 PRODUCTS

2.1 SEED

2.1.1 Seed Classification

State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS Seed Act and applicable state seed laws.

2.1.2 Permanent Seed Species and Mixtures

Permanent seed species and mixtures shall be proportioned by weight as follows:

Botanical Name	Common Name	Mixture Percent by Weight	Percent Pure Live Seed
		FIELD SEED	
~~Festuca trachyphylla~~	~~Hard Fescue~~	~~33%~~	~~85%~~
Festuca rubra v. commutata	Chewing Fescue	75%	90%
~~Festuca ovina L.~~	~~Sheep Fescue~~	~~33%~~	~~81%~~
Festuca rubra L.	Red Fescue	25%~~33%~~	90%

2.1.3 Quality

Weed seed shall be a maximum 1 percent by weight of the total mixture.

2.1.4 Seed Mixing

The mixing of seed may be done by the seed supplier prior to delivery, or on site as directed.

2.1.5 Substitutions

Substitutions will not be allowed without written request and approval from the Contracting Officer.

2.2 TOPSOIL

For field seeded areas, the topsoil shall be the existing surface soil stripped, stockpiled onsite, and screened in accordance with Section 02300 EARTHWORK. If there is insufficient screened onsite topsoil, topsoil shall be imported. Existing surface soil processed for use as topsoil or fill in field seeded areas shall be tested for pH and organic matter content. If organic matter is less than 5 percent by volume or 4 percent by weight, the soil shall be amended throughout with composted organic matter to meet this minimum.

Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 3/4 inch diameter. Topsoil shall be free from viable plants and plant parts. Topsoil shall be a sandy loam and shall have a maximum particle size of 3/4 inch with a maximum of 3 percent retained on a 1/4 inch screen and a minimum of 5 percent passing through a 1/20 inch screen. Topsoil shall contain 5-20 percent by volume (4-7 percent by weight) of mixed, composted, fine-particle organic matter. The source of organic matter shall have a carbon-nitrogen ratio of 25 to 1 and have a particle size that does not exceed 1/12 inch. Topsoil shall be obtained from well-drained areas and shall not contain more than 5 percent water by volume. The topsoil shall be free from debris, noxious weeds, rhizomes, roots, toxic substances, or any other material that may be harmful to plant growth. The pH shall be between 5.5 and 7.5. Soluble salts shall not exceed 500 ppm. Each delivery shall be accompanied by a guaranteed statement of analysis listing the percent of organic matter and the pH.

2.3 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, and fertilizer, organic material and soil conditioners meeting the following requirements. Vermiculite shall not be used.

2.3.1 pH Adjuster

The pH adjuster shall be an agricultural liming material in accordance with ASTM C 602. These materials may be burnt lime, hydrated lime, ground limestone, sulfur, or shells. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

2.3.1.1 Limestone

Limestone material shall contain a minimum calcium carbonate equivalent of 80 percent. Gradation: A minimum 95 percent shall pass through a 1/10 inch, No. 8 sieve and a minimum 55 percent shall pass through a 1/100" No. 60 sieve. To raise soil pH, ground limestone shall be used.

2.3.1.2 Hydrated Lime

Hydrated lime shall contain a minimum calcium carbonate equivalent of 110 percent. Gradation: A minimum 100 percent shall pass through a 1/10" No. 8 sieve and a minimum 97 percent shall pass through a 1/100" No. 60 sieve.

2.3.1.3 Burnt Lime

Burnt lime shall contain a minimum calcium carbonate equivalent of 140 percent. Gradation: A minimum 95 percent shall pass through a 1/10" No. 8 sieve and a minimum 35 percent shall pass through a 1/100" No. 60 sieve.

2.3.2 Fertilizer

It shall be as recommended by the soil test. For bidding purposes, fertilizer for field seeded areas shall be an organic fertilizer composed of 93%-94% fungal or bacterial biomass. The nutrient ratio shall be 6-1-3 or 7-2-3, with at least 70% of the nitrogen available in slow release form. Fertilizer shall be Biosol, Biosol Mix, or approved equal.

2.3.3 Nitrogen Carrier Fertilizer

It shall be as recommended by the soil test. Nitrogen carrier fertilizer shall be commercial grade, free flowing, and uniform in composition. The fertilizer may be a liquid nitrogen solution.

2.3.4 Organic Material

Organic material shall consist of either bonemeal, rotted manure, decomposed wood derivatives, recycled compost, or worm castings.

2.3.4.1 Bonemeal

Bonemeal shall be finely ground, steamed bone product containing from 2 to 4 percent nitrogen and 16 to 40 percent phosphoric acid.

~~2.3.4.2 Rotted Manure~~

~~Rotted manure shall be unleached horse, chicken or cattle manure containing a maximum 25 percent by volume of straw, sawdust, or other bedding materials. It shall contain no chemicals or ingredients harmful to plants.~~

~~The manure shall be heat treated to kill weed seeds and be free of stones, sticks, and soil.~~

2.3.4.2 Decomposed Wood Derivatives

Decomposed wood derivatives shall be ground bark, sawdust, yard trimmings, or other wood waste material that is free of stones, sticks, soil, and toxic substances harmful to plants, and is fully composted or stabilized with nitrogen.

2.3.4.3 Recycled Compost

Compost shall be a well decomposed, stable, weed free organic matter source. Compost shall be derived from food; agricultural or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated or mixed solid waste. The compost shall possess no objectionable odors and shall not resemble the raw material from which it was derived. The material shall not contain substances toxic to plants. Gradation: The compost material shall pass through a 3/8 inch screen, possess a pH of 5.5 to 8.0, and have a moisture content between 35-55 percent by weight. The material shall not contain more than 1 percent by weight of man-made foreign matter. Compost shall be cleaned of plastic material.

2.3.4.4 Worm Castings

Worm castings shall be screened from worms and food source, and shall be commercially packaged.

2.3.5 Soil Conditioner

Soil conditioner shall be sand, super absorbent polymers, calcined clay, or gypsum for use singly or in combination to meet the requirements of the soil test.

2.4 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.5 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.6 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

2.7 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 4.5 to 6.0.

2.8 WATER

Water shall be the responsibility of the Contractor, unless otherwise noted. Water shall not contain elements toxic to plant life.

2.9 PESTICIDE

Pesticide shall be insecticide, herbicide, fungicide, nematocide, rodenticide or miticide. For the purpose of this specification, a soil fumigant shall have the same requirements as a pesticide. The pesticide material shall be EPA registered and approved.

2.10 SURFACE EROSION CONTROL MATERIAL

Surface erosion control material shall conform to the following:

2.10.1 Hydrophilic Colloids

Hydrophilic colloids shall be physiologically harmless to plant and animal life without phytotoxic agents. Colloids shall be naturally occurring, silicate powder based, and shall form a water insoluble membrane after curing. Colloids shall resist mold growth.

PART 3 EXECUTION

3.1 INSTALLING SEED TIME AND CONDITIONS

3.1.1 Seeding Time

Seed shall be installed from 15 August to 31 October for fall establishment. Spring and early summer seeding shall be avoided.

3.1.2 Seeding Conditions

Seeding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the seeding operations, proposed alternate times shall be submitted for approval.

3.1.3 Equipment Calibration

Immediately prior to the commencement of seeding operations, calibration tests shall be conducted on the equipment to be used. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified criteria. The equipment shall be calibrated a minimum of once every day during the operation. The calibration test results shall be provided within 1 week of testing.

3.1.4 Soil Test

Delivered topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts analysis, and mechanical analysis.The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test shall determine the quantities and type of soil amendments required to meet local growing conditions for the seed species specified.

3.2 SITE PREPARATION

3.2.1 Finished Grade and Topsoil Placement

Spread existing screened stockpiled topsoil or import topsoil in areas to be field seeded to a minimum compacted depth of 4~~6~~ inches and as required to meet finish grade. Do not spread topsoil or soil amendment when frozen or excessively wet or dry. Protect topsoiled areas from damage by vehicular or pedestrian traffic. Blend all topsoiled and finish graded areas to adjacent existing grades to achieve a smooth, even surface. The Contractor shall verify that finished grades are as indicated on drawings, and the placing of topsoil, smooth grading, and compaction requirements have been completed, prior to the commencement of the seeding operation.

3.2.2 Application of Soil Amendments

3.2.2.1 Applying pH Adjuster

The pH adjuster shall be applied as recommended by the soil test. The pH adjuster shall be incorporated into the soil to a maximum 4 inch depth or may be incorporated as part of the tillage operation.

3.2.2.2 Applying Fertilizer

The fertilizer shall be applied as recommended by the soil test. Fertilizer shall be incorporated into the soil as part of the hydroseeding operation.

3.2.2.3 Applying Soil Conditioner

The soil conditioner shall be as recommended by the soil test. The soil conditioner shall be spread uniformly over the soil a minimum 1 inch depth and thoroughly incorporated by tillage into the soil to a maximum 4 inch depth.

3.2.3 Prepared Surface

3.2.3.1 Preparation

The prepared surface shall be a maximum 1 inch below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas. The prepared surface shall be completed with a light raking to remove debris.

3.2.3.2 Protection

Areas with the prepared surface shall be protected from compaction or damage by vehicular or pedestrian traffic and surface erosion.

3.3 INSTALLATION

Prior to installing seed, any previously prepared surface compacted or damaged shall be reworked to meet the requirements of paragraph SITE PREPARATION. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.

3.3.1 Installing Seed

Seeding method shall be Hydroseeding. Seeding procedure shall ensure even coverage. Gravity feed applicators, which drop seed directly from a hopper

onto the prepared soil, shall not be used because of the difficulty in achieving even coverage, unless otherwise approved. Absorbent polymer powder shall be mixed with the dry seed at the rate recommended by the manufacturer.

3.3.2 Hydroseeding

Field area mix shall be mixed to ensure broadcast at the rate of 8 pounds per thousand square feet. Seed and fertilizer shall be added to water and thoroughly mixed to meet the rates specified. The time period for the seed to be held in the slurry shall be a maximum 24 hours. Wood cellulose fiber mulch and tackifier shall be added at the rates recommended by the manufacturer after the seed, fertilizer, and water have been thoroughly mixed to produce a homogeneous slurry. Slurry shall be uniformly applied under pressure over the entire area. The hydroseeded area shall not be rolled.

3.3.3 Surface Erosion Control (Tackifier) and Mulching

3.3.3.1 Non-Asphaltic Tackifier

Hydrophilic colloid shall be applied to slopes that exceed 4:1 at the rate recommended by the manufacturer, using hydraulic equipment suitable for thoroughly mixing with water. A uniform mixture shall be applied over the area.

3.3.3.2 Wood Cellulose Fiber

Wood cellulose fiber shall be applied as part of the hydroseeding operation. The mulch shall be mixed and applied in accordance with the manufacturer's recommendations.

3.3.4 Watering Seed

Watering shall be started immediately after completing the seeding of an area. Water shall be applied to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 1 inch depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over turf areas, unless otherwise directed. Watering of other adjacent areas or plant material shall be prevented.

3.4 QUANTITY CHECK

For materials provided in bags, the empty bags shall be retained for recording the amount used. For materials provided in bulk, the weight certificates shall be retained as a record of the amount used. The amount of material used shall be compared with the total area covered to determine the rate of application used. Differences between the quantity applied and the quantity specified shall be adjusted as directed.

3.5 APPLICATION OF PESTICIDE

When application of a pesticide becomes necessary to remove a pest or disease, a pesticide treatment plan shall be submitted and coordinated with the installation pest management coordinator.

3.5.1 Technical Representative

The installation pest management coordinator shall be the technical

representative, and shall be present at all meetings concerning treatment measures for pest or disease control. They may be present during treatment application.

3.5.2 Application

A state certified applicator shall apply required pesticides in accordance with EPA label restrictions and recommendations. Clothing and personal protective equipment shall be used as specified on the pesticide label. A closed system is recommended as it prevents the pesticide from coming into contact with the applicator or other persons. Water for formulating shall only come from designated locations. Filling hoses shall be fitted with a backflow preventer meeting local plumbing codes or standards. Overflow shall be prevented during the filling operation. Prior to each day of use, the equipment used for applying pesticide shall be inspected for leaks, clogging, wear, or damage. Any repairs are to be performed immediately. A pesticide plan shall be submitted.

3.6 RESTORATION AND CLEAN UP

3.6.1 Restoration

Existing turf areas, pavements, and facilities that have been damaged from the seeding operation shall be restored to original condition at Contractor's expense.

3.6.2 Clean Up

Excess and waste material shall be removed from the seeded areas and shall be disposed offsite. Adjacent paved areas and buildings shall be cleaned of any seeding overspray.

3.7 PROTECTION OF INSTALLED AREAS

Immediately upon completion of the seeding operation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed.

3.8 SEED ESTABLISHMENT PERIOD

3.8.1 Commencement

The seed establishment period to obtain a healthy stand of grass plants shall begin on the first day of work under this contract and shall end 3 months after final acceptance of the project. Written calendar time period shall be furnished for the seed establishment period. When there is more than 1 seed establishment period, the boundaries of the seeded area covered for each period shall be described. The seed establishment period shall be modified for inclement weather, shut down periods, for separate completion dates of areas, or if satisfactory establishment has not been achieved.

3.8.2 Satisfactory Stand of Grass Plants

Grass plants shall be evaluated for species and health when the grass plants are a minimum 1 inch high.

3.8.2.1 Field Area

A satisfactory stand of grass plants from the seeding operation for a field

area shall be a minimum 10 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total seeded area.

3.8.3 Maintenance During Establishment Period

Maintenance of the seeded areas shall include eradicating weeds, insects and diseases; protecting embankments and ditches from surface erosion; maintaining erosion control materials and mulch; protecting installed areas from traffic; mowing; watering; and post-fertilization.

3.8.3.1 Mowing

Field areas shall be mowed once during the season to a minimum 3 inch height. Clippings shall be removed when the amount cut prevents sunlight from reaching the ground surface.

3.8.3.2 Post-Fertilization

The application rate shall be 4 pounds per 1000 square yards. A maximum 1/2 pound per 1000 square feet of actual available nitrogen shall be provided to the grass plants. The application shall be timed prior to the advent of winter dormancy and shall be made without burning the installed grass plants.

3.8.3.3 Pesticide Treatment

Treatment for disease or pest shall be in accordance with paragraph APPLICATION OF PESTICIDE.

3.8.3.4 Repair or Reinstall

Unsatisfactory stand of grass plants and mulch shall be repaired or reinstalled, and eroded areas shall be repaired in accordance with paragraph SITE PREPARATION.

3.8.3.5 Maintenance Record

A record of each site visit shall be furnished, describing the maintenance work performed; areas repaired or reinstalled; and diagnosis for unsatisfactory stand of grass plants.

-- End of Section --

SECTION 12352

RESIDENTIAL CASEWORK

****
NOTE: THIS SECTION IS ADDED IN ITS ENTIRETY BY AMENDMENT 0001.
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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A135.4	(1995) Basic Hardwood
ANSI A208.1	(1993) Wood Particleboard

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 366/A 366M	(1997) Commercial Quality (CS) Steel, Carbon, (0.15 Maximum Percent) Cold-Rolled

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

BHMA A156.9	(1994) Cabinet Hardware (BHMA 201)

HARDWOOD PLYWOOD & VENEER ASSOCIATION (HPVA)

HPVA HP-1	(1994) Hardwood and Decorative Plywood

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA LD 3	(1995) High-Pressure Decorative Laminate

U.S. DEPARTMENT OF COMMERCE (DOC)

PS1	(1995) Construction and Industrial Plywood

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-02 Shop Drawings

Cabinets; G

Show layout, details, materials, dimensions, and all information necessary for fabrication and installation.

SD-03 Product Data

Cabinets; G

Countertops; G

Hardware; G

Submit complete descriptive literature for each type of cabinet and countertop.

SD-04 Samples

Cabinet finishes; G

Where colors are not indicated, submit not less than eight different samples of manufacturer's standard colors for selection by the Contracting Officer.

Cabinets

Submit one assembled first article for inspection and approval by Contracting Officer at installation site.

1.3 DELIVERY AND STORAGE

Deliver materials in manufacturer's original unopened containers or packaging with labels intact and legible. Deliver, store, and handle materials so as to prevent damage. Replace defective or damaged materials with new.

PART 2 PRODUCTS

2.1 MODULAR CABINETS

The work includes providing new factory-finished kitchen base cabinets with preformed high pressure decorative laminate (HPDL)countertops. Each base cabinet module will have a drawer and door below.

2.2 MATERIALS

Conform to reference documents listed and specified requirements.

2.2.1 High-Pressure Decorative Laminate (HPDL)

NEMA LD 3, satin finish, unless otherwise indicated.

2.2.1.1 Countertops

PF 42, satin finish.

2.2.1.2 Vertical Surfaces

GP 28 or PF 30, satin finish.

2.2.1.3 Backing Sheet

BK 20.

2.2.1.4 Cabinet Liner

CL 20.

2.2.2 Hardwood Plywood

HPVA HP-1, Type II (Interior), three- or five-ply, with face veneer of good grade (1) or better. All exposed edges shall be covered.

2.2.3 Hardwood

All exposed wood surfaces shall be hardwood of species consistent with specified finish. Species used need not be that indicated by finish named, but must be similar in grain character and appearance.

2.2.4 Softwood Plywood

PS1.

2.2.4.1 Countertops

Exterior type, A-C Grade.

2.2.4.2 Elsewhere

Interior type, A-B Grade, may be used in lieu of hardwood plywood where HPDL finish is provided.

2.2.5 Hardboard

ANSI A135.4, tempered.

2.2.6 Particleboard

ANSI A208.1, Grade 1-M-2 or 2-M-2 or better may be used in lieu of plywood if both faces and all exposed edges are covered with wood veneer or HPDL.

2.2.7 Steel for Cabinets

ASTM A 366/A 366M, cold rolled, commercial quality carbon steel sheet.

2.3 FABRICATION

2.3.1 Cabinets

Kitchen base cabinets shall be of the same type of construction and appearance. Fabricate with solid ends and frame fronts, or with frame construction throughout. Frames shall be solid hardwood not less than 3/4 by 1 1/2 inches. Ends, bottoms, tops, and partitions shall be hardwood plywood [or particleboard]not less than 1/2 inch thick. Cabinet backs and drawer bottoms shall be 1/8 inch tempered hardboard. Provide mortise and tenon, dovetail, or dowel joints and glue together to produce a rigid unit. Finish all exposed edges of plywood [and particleboard] with hardwood strips or high-pressure decorative laminate. Provide 2 1/2 by 4 inch toe space with painted plywood or clear coated solid wood toe board.

2.3.1.1 Shelves

Plywood, or particleboard not less than 1/2 inch thick. Support shelves at ends and 24 inches on center.

2.3.1.2 Doors

Solid hardwood stiles and rails, not less than 3/4 inch thick with 5/8 inch, 45lb MDF flat panel with melamine finish.

2.3.1.3 Drawer Fronts

Flat panel 45lb. particle board w/ melamine surface not less than 1/2 inch thick to match doors.

2.3.1.4 Drawer Sides and Backs

Particle board, 45lb., not less than 1/2 inch thick w/ 1/4 inch thick MDF bottoms w/ melamine surface.

2.3.2 Hardware

BHMA A156.9. Provide necessary hardware, including door and drawer pulls, two self-closing hinges and a magnetic catch for each door and two side-mounted extension zinc-or cadmium-plated steel guides with steel ball bearings and nylon rollers for each drawer. Center-mounted guides are not acceptable. Exposed hardware shall have a chromium-plated finish.

2.3.3 Countertop

Fabricate with particleboard, glued and screwed to form an integral unit. Bond laminated plastic under pressure to exposed surfaces, using type of glue recommended by plastic manufacturer. Countertop unit shall be pre-formed type with no-drip nose, and Style A back splash, and covered with NEMA LD 3, Grade PF 42 plastic. Back splash shall be not less than 3 1/2nor more than 4 1/2 inches high.

2.4 FINISHES

2.4.1 Cabinet Finish

Provide factory applied Melamine finish or better on all internal and external surfaces except underside of drawer bottoms.

2.4.2 Countertop Finish

Pattern and color; as selected from manufacturer's standard finishes.

PART 3 EXECUTION

3.1 INSTALLATION

Install cabinets and countertops level, plumb, true to line, and tight against adjacent walls. Secure cabinets to walls with concealed screws or toggle bolts, and secure tops to cabinets with concealed screws. Provide closer and filler strips and finish moldings as required for a complete and finished installation. Draw joints in countertops up tight with special concealed fasteners. Joints shall be flush within 0.010 inch, shall not gap more than 0.020 inch, and shall be watertight. Align doors, adjust hardware, and clean all surfaces.

-- End of Section --